



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,236	08/22/2003	Satoshi Kawasaki	NGW-010	9384
959	7590	09/21/2005		
LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109			EXAMINER WEBB, TIFFANY LOUISE	
			ART UNIT 3616	PAPER NUMBER
DATE MAILED: 09/21/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/646,236	Applicant(s) KAWASAKI ET AL.	
	Examiner Tiffany Webb	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/21/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The disclosure is objected to because of the following informalities: the deformation detection sensor (page 3 lines 15-16) referring specifically to the G sensor as "6, 6".

Appropriate correction is required. The examiner suggests labeling the sensors as 6 and 6' or referring to a plural of sensors i.e. G sensors 6.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (US 6,378,637) in view of Shimizu (US 6,591,924). Ono et al. discloses a fuel cell vehicle driven by electric power (col. 3, lines 13-14) having a fuel cell box installed under the floor of the vehicle in a fuel cell box (3), and fails to disclose a deformation detecting sensor for detecting sideward impact with a protection device for implementing a predetermined protecting operation of the fuel cell when the sensor detects a predetermined amount of deformation of the vehicle body. Ono et al. further fails to disclose a deformation-detecting sensor comprising a plurality of acceleration sensors where the body deformation amount is obtained based on a difference detected by the respective acceleration sensors and deformation sensors disposed at the center of the vehicle and on the side of the vehicle. Shimizu discloses using acceleration

Art Unit: 3616

sensors (23R, 24L, and 25F) to detect the amount of deformation at the sides and front of a fuel cell vehicle through the difference in accelerations values from such sensors. Shimizu also discloses that when a predetermined amount of deformation occurs which exceeds a certain amount, a signal is sent to cutoff the valve from the hydrogen (col. 7 lines 40-49). Shimizu further teaches the placement of the acceleration sensors in the side and center of a fuel cell vehicle (col.5, lines 51-60). Ono et al. and Shimizu are analogous are because they both involve fuel cell vehicle structures. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have a fuel cell vehicle with a fuel cell under the floor of Ono et al. in view of the teachings of Shimizu in order to promote safety in fuel cell vehicles.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. in view of Shimizu as applied to claims 1, 2, and 4 above, and further in view of Mimura et al. Ono et al. and Shimizu are discussed above and fail to disclose the deformation sensor being a stroke sensor at a side of the fuel cell box. Mimura et al. discloses having a sensor that detects the relative displacement of a bracket with respect to the side of a vehicle (col. 5, lines 1-12). Mimura et al. teaches of a sensor on a side of a vehicle able to detect deformation of an outer structure by a sensor placed on an inner structure of the vehicle. The examiner takes the position that Mimura et al. meets the limitations of a stroke sensor as broadly claimed and broadly disclosed. It would have been obvious to a person having ordinary skill in the at the time of the invention to have a fuel cell vehicle of Ono et al., with deformation sensors placed in the center and side

of a vehicle of Shimizu, in view of the teachings of Mimura et al. in order to better detect when side impact deformation occurs in a fuel cell vehicle.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following are side impact collision sensing devices: Mimura et al. (US 5,934,703), Kato (US 5,793,005), Mazur et al. (US 5,484,166), Jeenicke et al. (US 5,483,447), and Ide et al. (6,167,335). Riemer et al. (US 5,641,031 is a fuel cell vehicle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Webb whose telephone number is 571-272-2797. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on 571-272-6669. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**RUTHILAN
PRIMARY EXAMINER**

Ruthilan
9/9/05

Tiffany Webb
Tiffany Webb

Application/Control Number: 10/646,236
Art Unit: 3616

Page 5

Examiner
Art Unit 3616

tlw